

What is claimed is:

1. A die set for press forming a metal sheet, comprising:
a punch; and
a die,

wherein a clearance CL2 between the punch and the die corresponding to a site to be formed immediately after an initial stage of press forming and a clearance CL1 between the punch and the die corresponding to a site to be formed in the initial stage of press forming are set so as to satisfy the following expressions (1) and (2), respectively:

$$0.8 \times t \leq CL1 \leq 1.2 \times t \quad \cdots (1)$$

$$CL2 \geq CL1 + t \quad \cdots (2)$$

where t denotes a thickness of the metal sheet to be formed.

2. The die set for press forming a metal sheet according to claim 1, further comprising a forming jig which moves in synchronism with the die while keeping a relative position to the die during forming, and forms a vertical wall portion of the metal sheet,

wherein in the forming jig, a clearance CL4 between the forming jig and the die in the vicinity of a die shoulder of the die is set so as to be wider than a clearance CL3 between the forming jig and the die in a forming area other than the

vicinity of the die shoulder of the die.

3. The die set for press forming a metal sheet according to claim 2, wherein the clearances CL3 and CL4 are set so as to satisfy the following expressions (3) and (4), respectively:

$$0.8 \times t \leq CL3 \leq 1.2 \times t \quad \cdots (3)$$

$$CL4 \geq CL3 + t \quad \cdots (4)$$

where t denotes the thickness of the metal sheet to be formed.

4. A press forming method of a metal sheet, comprising press forming the metal sheet using the die set for press forming according to claim 1.

5. A die set for press forming a metal sheet, and manufacturing a formed product having an inclined vertical wall portion, comprising:

a punch;

a die; and

a forming jig which moves in synchronism with the die while keeping a relative position to the die during forming, and forms the inclined vertical wall portion of the metal sheet,

wherein in the forming jig, a clearance CL4 between the forming jig and the die in the vicinity of a die shoulder of the die is set so as to be wider than a clearance CL3 between

the forming jig and the die in a forming area other than the vicinity of the die shoulder of the die.

6. The die set for press forming a metal sheet according to claim 5, wherein the clearances CL3 and CL4 are set so as to satisfy the following expressions (3) and (4), respectively:

$$0.8 \times t \leq CL3 \leq 1.2 \times t \quad \cdots (3)$$

$$CL4 \geq CL3 + t \quad \cdots (4)$$

where t denotes a thickness of the metal sheet to be formed.

7. A press forming method of a metal sheet, comprising press forming the metal sheet using the die set for press forming according to claim 5.